

SL1524LD LED Street Light Controller (Waterproof)

User's manual

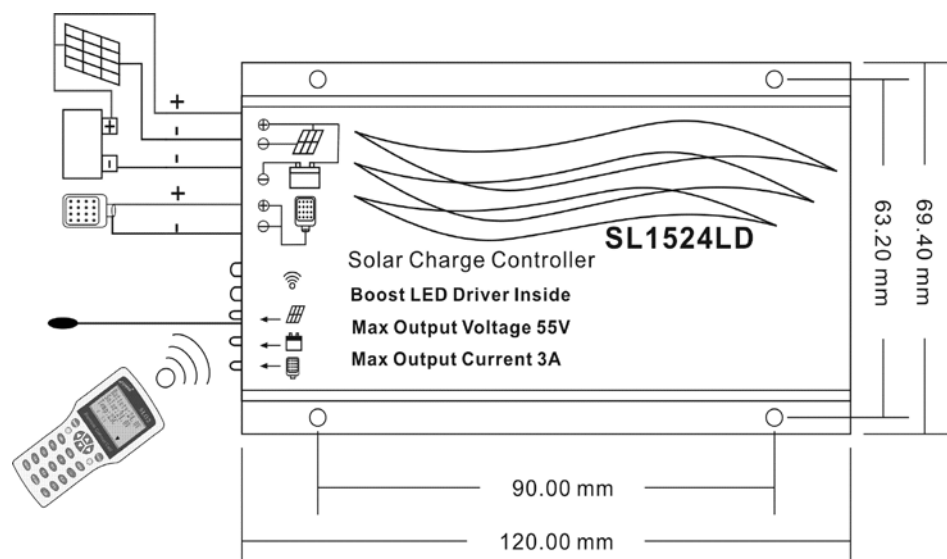
Dear users: Thanks for using the product. Please read the manual carefully before using it. SL1524LD Controller combined big power and step-up LED driver with water-resistant street light controller, which makes the installation, use, and maintenance of LED Street light system more convenient, which makes system work more reliable. Executive infrared programming device SL02 can check and set all technical data of controller. SL02 programming remote can communicate with controller by infrared, and finish the setting of controller floating, LED working current, LED working time, LED 's working power of different time. While finishing setting parameter on SL02, pressing the button (Send) one time and finishing controller parameter setting. It does improve the efficiency of LED Street light system. For detailed function information of SL02, please read its manual.

SL1524LD Function:

1. Epoxy resin sealing processing, which increased its nature of being anti-thrown, shock-resistant, waterproof, damp proof, anti-corrosive, waterproof and achieve IP68 level.
1. System voltage is 12/24V automatically identification.
2. Anti-reverse protection, Intelligent open circuit protection, short circuit protection of LED driver
4. SL1524LD built in high-precision step-up LED driver which can drive Max output voltage 55V, Max output power 120W for 24V System. Max driving efficiency is 95%.
5. Four time interval for PWM light adjustment, which makes LED Street light more intelligent and saves much electricity.
6. With temperature probe outside, temperature compensation is more accurate.
7. More advanced charging and discharging controlling calculation, which increases using efficiency of solar panel and extends battery longevity.
8. High power density, all is aluminum shell, volume is smaller but better performance.
9. SL1524LD has infrared wireless receiving and sending function, which can achieve wireless programming to controller by the SL02.
10. Consumers can adjust LED driver current with SL02 programming device, and no need to make specially.

Note: Remote is optional part to customer. If users want to change default parameters. Please buy remote or let us know detailed demand before factory production.

Installation diagram



1. Controller outer size: 120×69.4×20.5(mm) Installing hole diameter : $\phi 3.2$ (mm)
2. Confirming system voltage is 12V or 24V before connecting. Checking all wires, and avoid controller being damaged because of short circuit, then connect controller according to diagram.
3. First, please connect battery “+” positive and “-”negative, battery indicator will be lighting if right connection. (If battery indicator does not light, please stop operating .Please solve problem with reference of malfunction operation)
4. Please connect LED module to the load.

Note: Factory default current of LED driver is 1.5A, if consumers use LED module which its current is smaller than 1.5A, please do not connect LED module with the load, you must use infrared programming device SL02 to reset LED driver current. LED driver current (its rated value) can not be bigger than that of LED module. It will damage LED if driver rated current is too big.


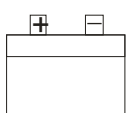
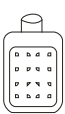
4. At last, connecting solar panel, charging indicator will be lighting if it is correct connection, which also means battery is charging .Blinking means battery is full charged and floated.

6.Try to make wire shorter between battery and controller, wire current density can not be bigger than $3A/mm^2$

7. SL1524LD Controller ‘s parameter can be amended by SL02 programming device. Otherwise, LED working time will be 14hrs at the first interval of system default, output power is 100%, time is 0H, LED driver current is 1.5A.

8 The setup parameter can be sent to controller with “Send” button on remote. The “Read” button has the function of showing controller’s setup parameter, current battery voltage, solar panel voltage, temperature and LED lamp current on SL02.

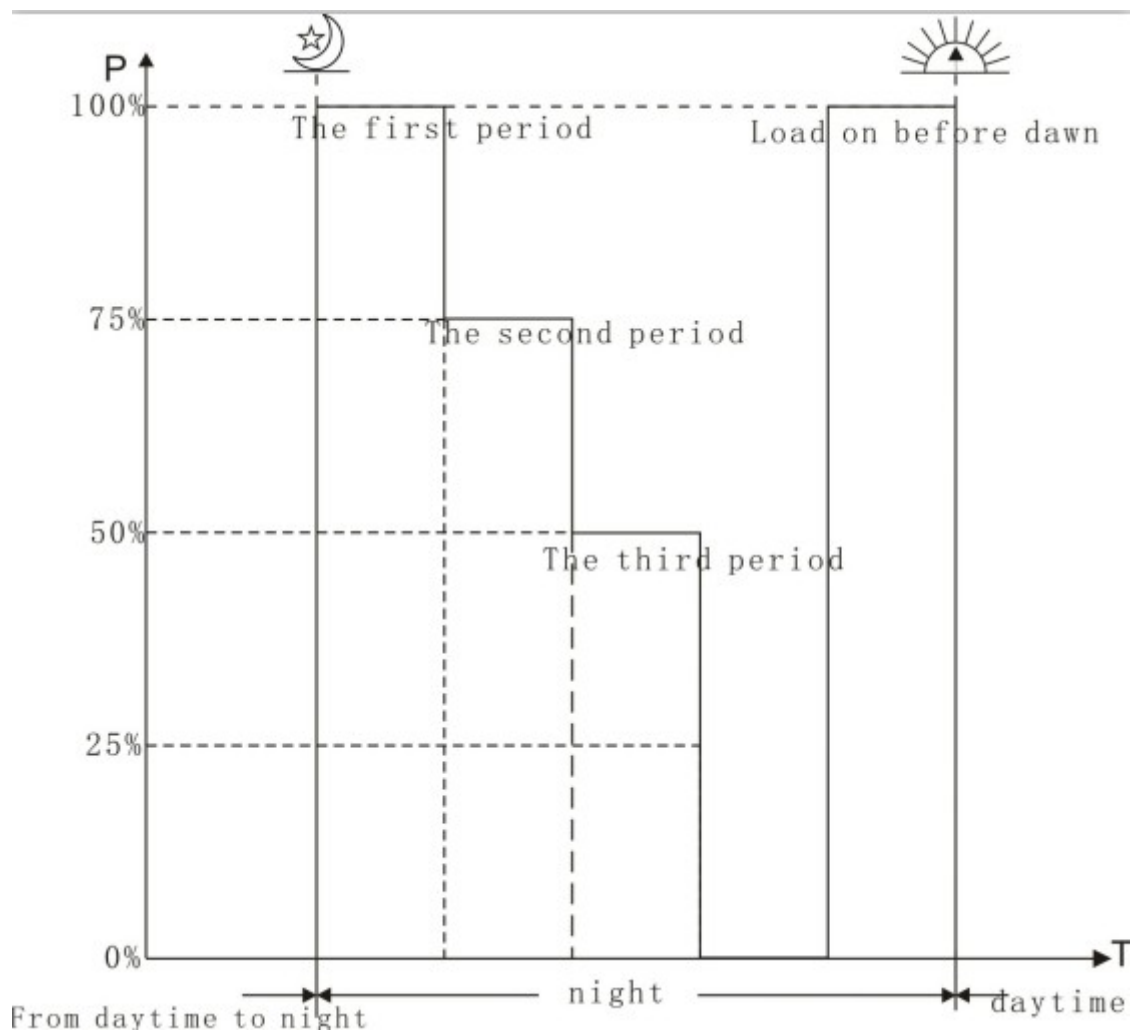
Status indication and function

Indicator		Status	Function
	PV Indicator	On	Solar panel has voltage and it is charging battery.
		Off	Solar panel voltage is low or 0 voltage or reverse connection.
		Blinking slowly	Battery is floating charging
	Battery indicator	On	Battery works normally.
		Off	Battery disconnected or battery reversely connected.
		Blinking slowly	Battery is under- voltage.
		Blinking fast	Controller is over-voltage.
	LED driver indicator	On	Load is working normally.
		Off	Load is off..
		Blinking slowly	Load is open circuit.

Note: When receiving and sending data, load indicator is used for indicating “ receiving and sending status “ .

Working mode introduction:

Load is distributed 4 time interval to work when it is sunset. Every time interval and power can be set freely by SL02 programming device, diagram is as below:



1. Minimum time is 00h and maximum time is 14h, system default for first time interval is 14Hrs, other interval is 00h .If setup time is more than that of the whole night. Even if the setup time does not finish and the load will be off when it is sunrise. Any time interval will be set to 00h, and move to next time interval directly. If setup value at the 1st interval is over 14Hrs and it will show 15Hrs, and load is not controlled by sunshine when entering into universal controller mode .The load has output in 24hrs when battery voltage is enough.

2. In the evening, the load will be off when 3 time interval operation is finished. If controller has no dawn lighting function, the load will not work and restart until the second night.

3. Load works when it is dark, minimum step up power is 0% of rated power. Maximum step up power is 100% of rated power .stepping 10%. Load does not work at any time interval if the power sets to 0% .If load power sets to 100%, the load will light completely in the time interval. System default is 100%.

4. “Dawn Lighting” means load starts working in N hours before dawn, which isn’t lighting until sunrise. “dawn lighting” before sunrise, which is not fixed time, controller will adjusted automatically according to time at night in

different season. It will take 3 days for controller to identify the time “before dawn”. Dawn lighting function is not so exact before the time. If you don’t use “dawn lighting “function, please set operating time into 00h

Setup data	Setup time range	Default
Operating time at the first segment in the evening.	01h~15 h	14 h
Operating power at the 1st time segment in the evening.	00%~100%	100%
Operating time at the 2nd time segment in the evening.	00h~14 h	00 h
Operating power at the 2nd time interval in the evening.	00%~100%	100%
Operating time at the 3rd time interval in the evening.	00h~14 h	00 h
Operating power at the 3rd time interval in the evening.	00%~100%	100%
Operating time from dawn	00h~14 h	00 h
Operating power from dawn	00%~100%	100%

The setup range of every time interval, power, and default before factory shipment

5. Controller distinguishes daytime or night from checking open circuit voltage of solar panel .When voltage is below 2.5V which lasts 15seconds, it is 12V system and we regard it as sunset. When voltage is over 2.5V+1V which lasts 15seconds, it is regarded as sunrise (24V x 2). Consumers can setup different light control identification point according to different solar panel and using circumstance.

Announcement

1. SL1524D is used for solar panel which is maximum output voltage is 50V ,battery maximum voltage is 35V.The load will be off when its voltage on battery is over 16.5V “(24V x 2)
2. SL1524LD built in big power and step-up LED driver, please be sure that LED module number, when LED connects in series, LED number range should be 5~15pcs for 12V system, and maximum power is 60W. When LED module is in series and its numbers are in 10~15pcs, maximum power is 120W. The more LED module connects in series, the less bright they are. If LED numbers are too less, which will cause LED lamp damaged and not constant.

System voltage	LED numbers	Max power
12V	5~15	60W
24V	10~15	120W

3. SL1524LD driver default is 1.5A, please setup LED driver current which you need before connection. Otherwise,
If current is too big, it will damage LED module
LED current is determined by LED connection (in series and in parallel). For example: lamp cap is made up of 30pcs 1W Led, if it is for 12V system, Led number in series should be within 5~15pcs. The LED number in series will choose even number in order to make lamp cap look symmetrical and here are two connection ways
 - a) Distributing into three units: connects 10pcs LED in series for each unit, then connect 3 units in parallel. Every units of LED current is 300Ma, total current of LED cap is 3*300mA=900 mA.
 - b) Distributing into five units: connects 6pcs LED in series for each unit, then connects five units in parallel, LED current is 300Ma for each unit, total current of LED cap is 5*300mA=1500 mA.. We can see total current is different after different connection (in series or in parallel). We must confirm LED connection before installing lamp cap, and set up driver rated current through programming device, then connects LED cap.

Technical data

	Model Parameter	SL1524LD	Current range
Input	Battery voltage	12V/24V Auto	
	Solar panel voltage	≤50V	
	Max charging current	10A	
Output	LED driver max output voltage	55V	
	LED driver max output power	12V/60W 24V/120W	
	LED driver output current	1.5A	0.3A~3A
	LED driver converting efficiency	90%-95%	
Protection	Battery reverse protection	Yes	
	Battery overvoltage protection	16.5V×1/×2	
	LED driver output short circuit protection	Yes	
	Solar panel reverse protection	Yes	
	Battery reverse discharging protection	Yes	
	Under voltage protection	11.2V; ×2/24V (25°C)	9V~12V
	Under voltage resumption	12.6V; ×2/24V (25°C)	11.7V~13.3V
Others	Standby loss	12V≤11mA 24V≤11mA	
	Float charging voltage	13.8V; ×2/24V (25°C)	13V~15V
	Absorbing charging voltage	14.4V; ×2/24V (25°C)	Add 0.6V on the basis of float charging
	Charging control voltage and temperature compensation	-4mv/cell/°C	
	Light control identification voltage	Night 2.5V,Daytime:3.5V ,×2/24V	1V~10V
	Light control identification time	15sec	
	Working temperature range	-30°C~60°C	
	Protection grade	IP68	
	Controller dimension	120mm×69.4 mm×20.5mm	
	Net Weight	275g	

Warranty:

- We guarantee to replace, return and repair controller in 7days after sales
 - We guarantee to repair and replace in a month after sales.
 - We guarantee to repair controller in a year after sales.
- If it is unable to confirm using date, the warranty period is 18months from factory shipment, it is not free of charge if beyond warranty period. Using our company product, consumers can share on premium service all the time, no time limit.
- If the reason of damaged controller is as following mentioned, controller maintenance is not free.

 - Not to follow user's manual to operate.
 - Beyond product using standard, technical data.
 - Being repaired or remade by consumers themselves.

- The parts are old because of bad circumstance.
- Moving, shipping or storing in wrong way.
- For returned, replaced and repaired service, we demand that controller appearance is not being damaged, and we will return or repair after our confirmation to damaged product.

4. If any loss is caused of unreasonable system design or parameter setup, we are not responsible for this consequence.

Fault diagnosis

Phenomenon	Reason and solution
Battery indicator is not on.	battery is reverse connection or wire connection is loosely
Load is not on when sunset, charging indicator is till on.	Solar panel voltage is bigger than identification point of light control, please check if solar panel surface is surrounded by powerful sunshine.
Load is not on when sunset, battery indicator is blinking slowly.	Battery is under voltage, load will work after battery charging is full on the second day .
Load is not on when sunset ,load indicator is blinking slowly/	Please check if LED module is connected reversely, wire connects off, performance and parameter is right or not.
Charging indicator is not on when there is sunshine.	Please check if solar panel is connected reversely or loosely.

Factory Inspection Certificate

Production name: Solar charge controller

Model : SL124LD

Inspector:

Check

Production Date: See product.

Origin: China

The product is quality conformance after inspection before shipment.